1. **ALGEBRAIC PROOFS**

*Reminder*: Represent the complex numbers in rectangular form if they have not been readily defined yet.

**Example**: Show that if and are two complex numbers.

Let and . Therefore and .

LHS =

*reminder:*

RHS =

LHS

Therefore

1. **LOCI**

*Reminder*: Represent the complex numbers in rectangular form if they have not been readily defined yet.

**Example**: Find the locus (set of points) of if .

Let . Then

*reminder:*

Therefore

can be written as .

Squaring both sides leaves you with .

This is the equation for a circle of radius 1 and centre (1, 0).

This is the locus (set of points) for .

1. **MULTI-STEP EQUATIONS**

*Reminder*: A polynomial of degree has exactly roots.

**Example**: Completely solve the following equation: .

*let*

*De Moivre’s Theorem*

*3 solutions, as we’re solving i.e. a cubic*

Since , then , , and .

Solving :

1

*De Moivre’s Theorem*

Solving :

*change to polar form*

*De Moivre’s Theorem*

Solving :

*change to polar form*

*De Moivre’s Theorem*

So the solutions are: , , ,

, , and .